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## Certificate of Transmission

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Carl Oppedahl

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## PRELIMINARY AMENDMENT

Prior to examination of the application, kindly amend the claims as follows.

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1. An optical sensor for the characterization or the detection or the detection and characterization of at least one chemical or bio-chemical substance comprising:

at least one optical waveguide with a substrate, a waveguiding material, a cover medium and at least one waveguide grating structure,

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at least two sensing pads comprising at least one unidiffractive or multidiffractive grating, at least one of the sensing pads acting as sensor pad and comprising a sensor chemosensitive or bio-chemosensitive substance, and at least one of the sensing pads acting as reference pad and comprising a reference chemosensitive or bio-chemosensitive substance,

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light source means for the illumination of gratings of the sensor pad and of the reference pad;

detection means for detection of positions or of intensities or of positions and of intensities of at least two light distribution proportions, which, on the detection means, are not superimposed on one another and which are emitted or coupled out or emitted and coupled out from the waveguide

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